

What is claimed is:

1. A controller for controlling a synchronous motor having a movable member and a stationary member, one of said movable member and stationary member being provided with magnetic poles and the other thereof provided with excitation coils, said controller comprising:

a motor control section for drivingly controlling the synchronous motor and detecting position of the magnetic poles relative to the excitation coils by exciting the excitation coils at a predetermined excitation phase using a sensor for detecting position or velocity of the movable member; and

a numerical control section for performing numerical control by issuing commands to said motor control section,

wherein said numerical control section outputs a start command to start detection of the position of the magnetic poles to said motor control section, said motor control section starts detection of the position of the magnetic poles in response to the start command and informs said numerical control section of a state of the detection of the position of the magnetic poles, and said numerical control section determines a normal completion or an abnormality of the detection based on the state of the detection informed by said motor control section.

2. A controller according to claim 1, wherein said numerical control section stops the detection of the position of the magnetic poles and issues an alarm when an abnormality of the detection is determined.

3. A controller according to claim 1, wherein a plurality of motor control sections are provided for respectively drivingly controlling a plurality of synchronous motors for cooperatively driving one driven element, and said numerical control section outputs a start command to one of said plurality of

motor control sections to start detection of position of the magnetic poles to enable the detection of the magnetic poles in an associated synchronous motor, and issues commands to the others of said motor control sections to release excitation of associated synchronous motors to eliminate interference with the detection of the position of the magnetic poles by the one motor control section.

4. A controller according to claim 1, wherein a plurality of motor control sections are provided for respectively drivingly controlling a plurality of synchronous motors for cooperatively driving one driven element, and said numerical control section issues start commands for starting detections of positions of the magnetic poles to said plurality of motor control sections to enable the detections of the positions of the magnetic poles of associated synchronous motors simultaneously.

5. A controller according to claim 4, further comprising a storage device storing a relative displacement between positions of the magnetic poles of the plurality of synchronous motors, wherein said plurality of motor control sections perform the detections of the positions of the magnetic poles using the relative displacement between the positions of the magnetic poles stored in said storage device.

6. A controller according to any one of claims 1 through 5, wherein the synchronous motor comprises a linear synchronous motor in which one of the movable member and the stationary member is provided with magnetic poles, and the other thereof provided with excitation coils.

7. A controller according to any one of claims 1 through 5, wherein the synchronous motor comprises a rotary synchronous motor having a rotor as the

movable member provided with magnetic poles and a stator as the stationary member provided with excitation coils.